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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,813	01/11/2002	Andrew W. McClaine	13806-002001	9071

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EXAMINER	
MEDINA SANABRIA, MARIBEL	
ART UNIT	PAPER NUMBER
1754	

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/044,813	MCCLAINE ET AL.	
	Examiner	Art Unit	
	Maribel Medina	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 January 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *63-78* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *63-71,73,74 and 76-78* is/are rejected.

7)☒ Claim(s) *72 and 75* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 January 2002* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *9/27/02;2/21/03*; 11/28/03
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because:

a. they do not include the following reference sign(s) mentioned in the description: "160" (see page 18, line 5).

b. they include the following reference sign(s) not mentioned in the description: "60", "150" and "152" (See figure 6).

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Information Disclosure Statement

2. The information disclosure statement filed 2/21/2003 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because the references are not related to the instantly claimed invention. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 63, 64, 69, 70,74, and 76 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 3,346,506 (Beumel).

Beumel discloses a method for fueling a device with hydrogen generated from the reaction of a composition with water (See col. 1, lines 46-50 and col. 3, lines 54-64). The composition comprises lithium hydride, a non-aqueous organic liquid soluble in water and a non-aqueous organic liquid insoluble in water, such as mineral oil. The non-aqueous organic liquids act as a dispersant and carrier (See col.1, line 59 to col.2, line 69). No difference is seen between the instantly claimed invention and Beumel's disclosure.

5. Claims 63-70, 74, 76 and 77 are rejected under 35 U.S.C. 102(b) as being anticipated by Breault et al. *"Hydrogen For A PEM Fuel Cell Vehicle Using A Chemical Hydride Slurry"*, Proceedings of the 1999 U.S. DOE Hydrogen Program Review NRL/CP-570-26938.

Breault et al disclose the process for fueling a fuel cell with hydrogen generated from the reaction of a composition with water. The composition comprises a hydride (e.g. lithium hydride), a dispersant and an oil carrier. Note that Breault et al disclose all the limitations of claims 64-70, 74, 76 and 77 (See entire document). No difference is seen between the instantly claimed invention Breault et al disclosure.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 78 is rejected under 35 U.S.C. 103(a) as being unpatentable over Breault et al as applied to claims 63-70, 74, 76 and 77 above, and further in view of US Patent No. 3,101,592 (Robertson et al).

Breault et al disclose using hydrogen as a fuel in a fuel cell system, however, fails to disclose using the generated hydrogen in a combustion engine.

Robertson et al is relied upon to teach using hydrogen generated from the reaction of a hydride with water as a fuel in combustion engines (See entire document).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the hydrogen generated by the method and composition of Breault et al in a combustion engine, since Robertson et al teaches using, in a combustion engine, hydrogen generated from the reaction of a hydride with water.

8. Claim 78 is rejected under 35 U.S.C. 103(a) as being unpatentable over Beumel as applied to claims 63, 64, 69, 70,74, and 76 above, and further in view of US Patent No. 3,101,592 (Robertson et al).

Beumel applies herein as above. Beumel discloses using hydrogen as a fuel in distress signal billons, buoy, or ballast tank, however, fails to disclose using the generated hydrogen in a combustion engine (claim 78).

Robertson et al is relied upon to teach using hydrogen generated from the reaction of a hydride with water as a fuel in combustion engines (See entire document).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the hydrogen generated by the method and composition of Beumel in a

combustion engine, since Robertson et al teaches using, in a combustion engine, hydrogen generated from the reaction of a hydride with water, and since Beumel discloses that thee hydrogen generated from the composition can be used in any known use (See col. 3, lines 50-63).

9. Claims 73 and 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beumel as applied to claims 63, 64, 69, 70,74, and 76 above, and further in view of US Patent No. 3,674,702 (MacKenzie et al).

Beumel et al apply herein as above. Beumel discloses using hydrogen as a fuel in distress signal billons, buoy, or ballast tank, however, fails to disclose using the generated hydrogen in a fuel cell (claim 77) and fails to disclose the that metal hydride is magnesium hydride

MacKenzie et al is relied upon to teach using hydrogen generated from the reaction of a hydride with water as a fuel in a fuel cell (See col.2, lines 49-53).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the hydrogen generated by the method and composition of Beumel in a fuel cell, since MacKenzie et al teaches using, in a fuel cell, hydrogen generated from the reaction of a hydride with water, and since Beumel discloses that thee hydrogen generated from the composition can be used in any known use (Se col. 3, lines 50-63).

In regards to the use of magnesium hydride (claim 73), MacKenzie et al show that magnesium hydride is an equivalent to lithium hydride (See col. 2, lines 1-5). Therefore, because these two hydrides were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute magnesium hydride for lithium hydride in Beumel's composition.

10. Claim 73 is rejected under 35 U.S.C. 103(a) as being unpatentable over Breault et al as applied to claims 63-70, 74, 76 and 77 above, and further in view of US Patent No. 3,674,702 (MacKenzie et al).

Breault et al apply herein as above. Breault et al disclose the claim invention, however fails to disclose the use of magnesium hydride as the hydride.

MacKenzie et al show that magnesium hydride is an equivalent to lithium hydr (See col. 2, lines 1-5). Therefore, because these two hydrides were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute magnesium hydride for lithium hydride. Alternatively Breault et al disclose that the selection of a hydride is an optimization to his invention (See section titled "The Bench-top Prototype System"), therefore on of ordinary skilled the art would have been motivated to find by experimentation the most effective hydride. Note See *In re Boesch,* 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Allowable Subject Matter

11. Claims 71, 72, and 73 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter: claims 71, 72 , and 75 are allowable upon consideration of the prior art. The prior art fails to disclose or suggest that the dispersant is a triglyceride or triolein ands fails to disclose or suggest using a composition comprising mineral oil, triolein and magnesium hydride to generated hydrogen.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maribel Medina whose telephone number is (571) 272-1355. The examiner can normally be reached on Monday through Friday from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Maribel Medina
Examiner
Art Unit 1754